

**Notice of Allowability**

Application No.

09/893,788

Examiner

Quoc A. Tran

Applicant(s)

NOVAES, MARCOS NOGUEIRA

Art Unit

2176

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Application's Amendment filed 02/23/2006.
2. ☒ The allowed claim(s) is/are 1-23, 32-34, and 36-37 (renumbered as 1-23, 32-34, 36-37, 38-40, 41-43, 44-46, 47-49, 50-52, 53-55, 56-58, 59-61, 62-64, 65-67, 68-70, 71-73, 74-76, 77-79, 80-82, 83-85, 86-88, 89-91, 92-94, 95-97, 98-100, 101-103, 104-106, 107-109, 110-112, 113-115, 116-118, 119-121, 122-124, 125-127, 128-130, 131-133, 134-136, 137-139, 140-142, 143-145, 146-148, 149-151, 152-154, 155-157, 158-160, 161-163, 164-166, 167-169, 170-172, 173-175, 176-178, 179-181, 182-184, 185-187, 188-190, 191-193, 194-196, 197-199, 200-202, 203-205, 206-208, 209-211, 212-214, 215-217, 218-220, 221-223, 224-226, 227-229, 230-232, 233-235, 236-238, 239-241, 242-244, 245-247, 248-250, 251-253, 254-256, 257-259, 260-262, 263-265, 266-268, 269-271, 272-274, 275-277, 278-280, 281-283, 284-286, 287-289, 290-292, 293-295, 296-298, 299-301, 302-304, 305-307, 308-310, 311-313, 314-316, 317-319, 320-322, 323-325, 326-328, 329-331, 332-334, 335-337, 338-340, 341-343, 344-346, 347-349, 350-352, 353-355, 356-358, 359-361, 362-364, 365-367, 368-370, 371-373, 374-376, 377-379, 380-382, 383-385, 386-388, 389-391, 392-394, 395-397, 398-400, 401-403, 404-406, 407-409, 410-412, 413-415, 416-418, 419-421, 422-424, 425-427, 428-430, 431-433, 434-436, 437-439, 440-442, 443-445, 446-448, 449-451, 452-454, 455-457, 458-460, 461-463, 464-466, 467-469, 470-472, 473-475, 476-478, 479-481, 482-484, 485-487, 488-490, 491-493, 494-496, 497-499, 500-502, 503-505, 506-508, 509-511, 512-514, 515-517, 518-520, 521-523, 524-526, 527-529, 530-532, 533-535, 536-538, 539-541, 542-544, 545-547, 548-550, 551-553, 554-556, 557-559, 560-562, 563-565, 566-568, 569-571, 572-574, 575-577, 578-580, 581-583, 584-586, 587-589, 590-592, 593-595, 596-598, 599-601, 602-604, 605-607, 608-610, 611-613, 614-616, 617-619, 620-622, 623-625, 626-628, 629-631, 632-634, 635-637, 638-640, 641-643, 644-646, 647-649, 650-652, 653-655, 656-658, 659-661, 662-664, 665-667, 668-670, 671-673, 674-676, 677-679, 680-682, 683-685, 686-688, 689-691, 692-694, 695-697, 698-700, 701-703, 704-706, 707-709, 710-712, 713-715, 716-718, 719-721, 722-724, 725-727, 728-730, 731-733, 734-736, 737-739, 740-742, 743-745, 746-748, 749-751, 752-754, 755-757, 758-760, 761-763, 764-766, 767-769, 770-772, 773-775, 776-778, 779-781, 782-784, 785-787, 788-790, 791-793, 794-796, 797-799, 800-802, 803-805, 806-808, 809-811, 812-814, 815-817, 818-820, 821-823, 824-826, 827-829, 830-832, 833-835, 836-838, 839-841, 842-844, 845-847, 848-850, 851-853, 854-856, 857-859, 860-862, 863-865, 866-868, 869-871, 872-874, 875-877, 878-880, 881-883, 884-886, 887-889, 890-892, 893-895, 896-898, 899-901, 902-904, 905-907, 908-910, 911-913, 914-916, 917-919, 920-922, 923-925, 926-928, 929-931, 932-934, 935-937, 938-940, 941-943, 944-946, 947-949, 950-952, 953-955, 956-958, 959-961, 962-964, 965-967, 968-970, 971-973, 974-976, 977-979, 980-982, 983-985, 986-988, 989-991, 992-994, 995-997, 998-1000 respectively).
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f). (e)
- a) ☐ All b) ☐ Some\* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☒ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☒ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date 12/30/2005
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date 05/14/2006
7. ☒ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

WILLIAM BASHORE  
PRIMARY EXAMINER

5/14/2006

### EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. John J Dresch, Attorney for Applicants, Reg. No.: 46,672 on 05/12/2006

The application has been amended as follows:

1. (Currently amended) A computer implemented method of navigating data blocks, comprising:

opening a first data block of a plurality of data blocks of interest, said plurality of data blocks being spatially indexed in N dimensions;

viewing a closeness relationship between said first data block opened and a second plurality of data blocks based on their content; ~~and~~

accessing a second data block of said second plurality of data blocks which is viewed to be closest to said first data block; and

~~The method of claim 1, further comprising:~~

spatially indexing a collection of data blocks using a collection of text strings 1 to N as a search criteria,

wherein said spatially indexing includes:

determining whether an index record i is less than a number M of blocks in the database and if so setting a number j to 0;

Art Unit: 2176

determining whether  $j$  is less than the number  $N$  of keywords in a search corpus, and if so, calculating a search result  $R_j$  as a number of occurrences of word  $W_j$  in the data block  $B(i)$ ;

storing the search result  $R_j$  in an index of block  $B(i)$ ; and

incrementing  $j$  by "1" and determining whether  $j$  is less than  $N$ .

2. (Original) The method of claim 1, wherein a user views said first data block and views its relationship with other data blocks based on a calculation of a distance function, and without traversing a hypertext link, and without subsequently accessing a prior search results page.

3. (Original) The method of claim 1, further comprising:

each time a data block is accessed, building a proximity list indicating a closeness of another plurality of data blocks to the data block accessed currently, such that the user traverses data blocks horizontally to find a most relevant data block to information sought.

4. (Original) The method of claim 1, wherein  $N$  is a number of words or subjects in a selected corpus.

5. (Original) The method of claim 1, further comprising:

inputting, by a user, an input indicating a search to be performed, the input including a collection of data blocks which are to be indexed, said data blocks selectively containing data, metadata, and links to other data blocks.

6. (Original) The method of claim 5, wherein the user further inputs a search depth defining how many links are to be followed during a search process and a collection of text strings 1 to N is input, said text strings being used as search criteria in a spatial indexing process.

7. (Original) The method of claim 6, further comprising:

creating, for each data block given as an input, an index record for storing search results which relate each said data block to each of the strings in the collection; and

creating a global index record array which contains index records for each of the data blocks given as an input.

8. (Previously presented) A computer implemented method of navigating data blocks, comprising:

opening a first data block of a plurality of data blocks of interest, said plurality of data blocks being spatially indexed in N dimensions;

viewing a closeness relationship between said first data block opened and a second plurality of data blocks based on their content;

accessing a second data block of said second plurality of data blocks which is viewed to be closest to said first data block;

inputting, by a user, an input indicating a search to be performed, the input including a collection of data blocks which are to be indexed, said data blocks selectively containing data, metadata, and links to other data blocks;

wherein the user further inputs a search depth defining how many links are to be followed during a search process and a collection of text strings 1 to N is input, said text strings being used as search criteria in a spatial indexing process,

creating, for each data block given as an input, an index record for storing search results which relate each said data block to each of the strings in the collection; and

creating a global index record array which contains index records for each of the data blocks given as an input,

wherein said indexing of the data blocks includes:

determining whether an index record  $i$  is less than a number  $M$  of blocks in the database and if so setting a number  $j$  to 0;

determining whether  $j$  is less than the number  $N$  of keywords in a search corpus, and if so, calculating a search result  $R_j$  as a number of occurrences of word  $W_j$  in the data block  $B(i)$ ;

storing the search result  $R_j$  in the index of block  $B(i)$ ; and

incrementing  $j$  by "1" and determining whether  $j$  is less than  $N$ .

9. (Original) The method of claim 8, further comprising:

if  $j$  is determined to be less than  $N$ , incrementing the index record  $i$  and determining whether  $i$  is less than the number  $M$  of blocks in the database.

10. (Original) The method of claim 9, further comprising:

if  $i$  is not less than  $M$ , then storing a vector  $R()$  in the index of each block  $B(i)$  as a spatial coordinate of each document  $B_i$ .

11. (Original) The method of claim 1, further comprising:

calculating and displaying a proximity list for a data block.

12. (Previously presented) A computer implemented method of navigating data blocks, comprising:

opening a first data block of a plurality of data blocks of interest, said plurality of data blocks being spatially indexed in  $N$  dimensions;

viewing a closeness relationship between said first data block opened and a second plurality of data blocks based on their content;

accessing a second data block of said second plurality of data blocks which is viewed to be closest to said first data block; and

calculating and displaying a proximity list for a data block,  
said calculating comprising:  
reading an input data block B(c);  
reading search results R1 to Rn stored in the index in block B;  
setting i to "1", and determining whether i is less than a number M of blocks in the database and if so, setting j to 1 and a distance to 0;  
determining whether j is less than a number N of key words in a search corpus, and if so incrementing the distance to a sum of a previous distance and an absolute value of a difference between a result Rj of block Bc and the result Rj of block Bj, and incrementing j.

13. (Original) The method of claim 12, further comprising:

if j is determined to be not less than N, then incrementing i and again determining if i is less than M.

14. (Original) The method of claim 12, further comprising:

if it is determined that i is not less than M, then building a proximity list by listing the data blocks B(i) wherein  $0 < i < M$  by ascending order according to a value of distance (i), thereby to calculate the proximity list for the data block.

15. (Original) The method of claim 1, further comprising:

positioning, by the user, a search focus and directing coordinates of a search.

16. (Original) The method of claim 1, further comprising:  
providing a graphical user interface which shows a projection of the N- dimensional space into a plurality of dimensions.
17. (Original) The method of claim 16, further comprising:  
displaying the projection in three dimensions obtained by first selecting all data blocks in the space which have a non-zero value for coordinates (x, y, z), where x, y, and z are search criteria, and then by making a value of all other coordinates equal to zero.
18. (Original) The method of claim 17, further comprising:  
displaying search results in a scatter-plot, thereby to reveal a geometric solid with dense and sparse areas, such that the solid is oriented in the three axes, and points which are at the center are related to all three subjects and such that points with a relatively high value in one axis, and relatively low values in the remaining axes will contain data blocks which are relevant only to the term relevant to the one axis, but not to terms relevant to the remaining axes.
19. (Original) The method of claim 18, wherein most significant Web pages are displayed in a most densely populated area that is not skewed towards any particular axis, and



wherein a current position of the search is shown in the scatter-plot, such that a user navigates documents in the scatter-plot using a hand-held input mechanism.

20. (Original) The method of claim 19, wherein said hand-held input mechanism comprises at least one of a mouse, a touchpad, a light pointer, a keyboard, and a joy stick.

21. (Original) The method of claim 19, further comprising:  
as the user navigates the three dimensional scatter-plot, changing a current position and a proximity list.

22. (Original) The method of claim 21, wherein, during a spatial search, the user positions the current position in a center of the most densely populated area.

23. (Original) The method of claim 1, wherein said data blocks comprise documents, said method further comprising:  
selectively providing documents with or without any inter-document links.

24-31. (Canceled).

32. (Previously presented) The method of claim 1, wherein said viewing comprises:  
displaying information according to a location in an N-dimensional space.

33. (Previously presented) The method of claim 1, wherein said closeness relationship comprises:

a relationship of a Euclidean distance between points in an N-dimensional space.

34. (Previously presented) The method of claim 2, wherein said distance function comprises:

a distance function in Euclidean space.

35. (Canceled).

36. (Previously presented) The method of claim 1, further comprising:

reading an input data block B(c);

reading search results R1 to Rn stored in an index in block B;

setting i to "1", and determining whether i is less than a number M of blocks in the database and if so, setting j to 1 and a distance to 0;

determining whether j is less than a number N of key words in a search corpus, and if so incrementing the distance to a sum of a previous distance and an absolute value of a difference between a result Rj of block Bc and the result Rj of block Bj, and incrementing j.

37. (Previously presented) The method of claim 1, wherein N is a number of words or subjects in a selected corpus, and

Art Unit: 2176

wherein said viewing includes displaying information according to a location in an N-dimensional space, and

wherein said closeness relationship includes a relationship of a Euclidean distance between points in the N-dimensional space.

### *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quoc A. Tran whose telephone number is (571) 272-4103. The examiner can normally be reached on Monday through Friday from 9 AM to 5 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Herndon R. Heather can be reached on (571) -272-4136. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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*Quoc A. Tran*  
Patent Examiner  
Technology Center 2176  
May 14, 2006

*William S. Bashore*  
**WILLIAM BASHORE**  
**PRIMARY EXAMINER**  
5/14/2006